ABSTRACT

Methods are provided for rapid detection with high specificity of the pathogenic form of prion protein responsible for neurodegenerative diseases affecting humans and animals, such as transmissible spongiform encephalopathy in bovine, sheep, and cats. Methods are also provided for testing animal feedstock for pathogenic prio protein. Results are available in from about 0.5 to about 20 minutes and preferably within from about 5 to about 10 minutes. The methods employ proteinase-K to remove normal prion protein from a biological sample, so that the sample may be analyzed by immunochromatography to determine the presence and concentration of pathogenic prion protein. Because the proteinase-K is immobilized on a solid support for *in-situ* removal of interfering components, the present invention obviates the need for subsequent extraction of the desired analyte. All aspects of the present invention are suitable for quantifying the minimal detectable amount of pathogenic prion protein in a test sample. Moreover, the simplicity of sample preparation makes the present invention suitable for use in the field.